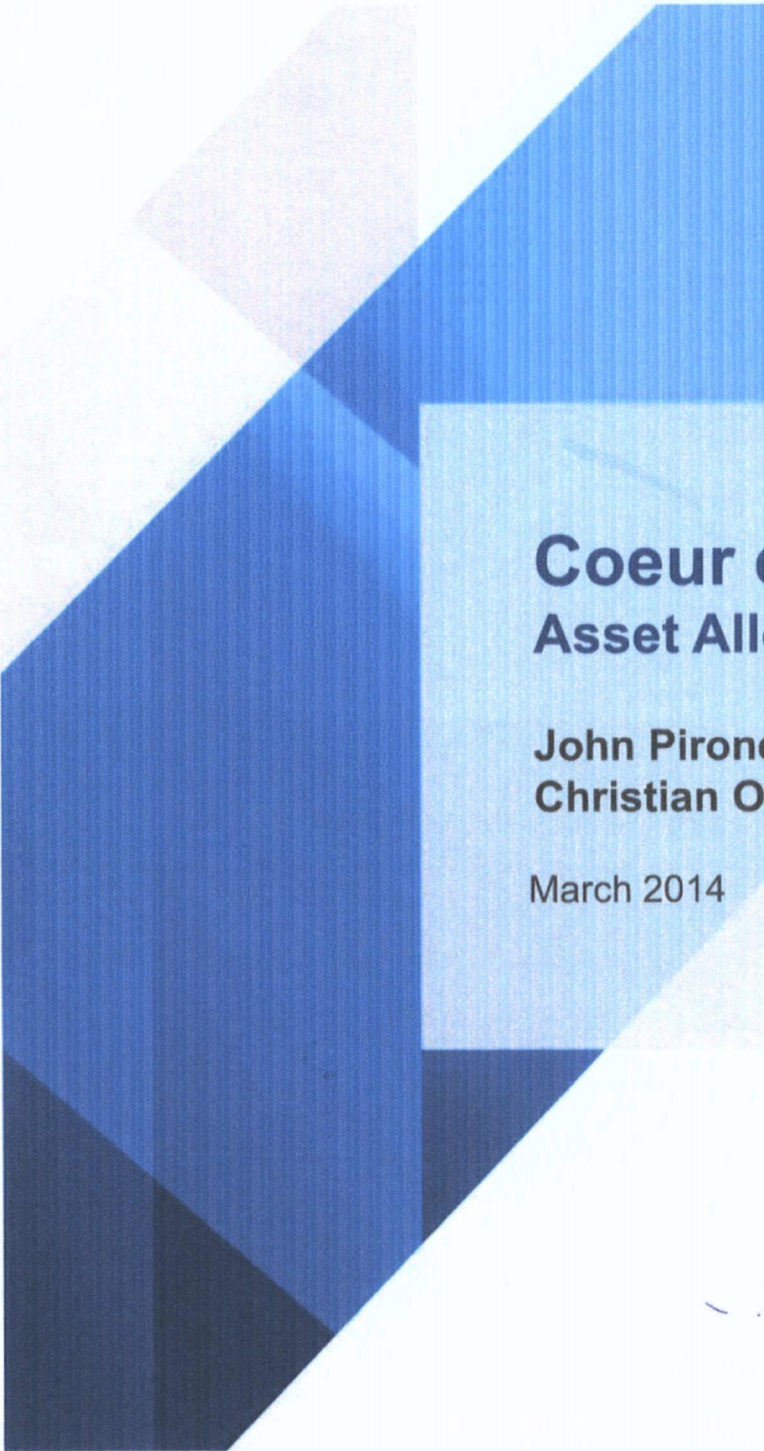


BBWSF
12.13.2.3

BLACKROCK®



Coeur d' Alene Trust Asset Allocation Review

**John Pirone, CFA, Managing Director
Christian Olinger, Associate**

March 2014

USEPA SF



1412861

Executive summary

Current equity allocation is reasonable, given the long time horizon of the trust and high annual payout of \$25m in real terms

- ▶ When setting the strategic asset allocation, there are two components of risk to consider – the risk of losing money in the short-term (i.e. negative annual returns) and the risk of not being able to meet the spending commitments over the long-term
- ▶ While the higher volatility of equity increases the risk of losing money in the short-term, its higher expected return over the long-term increases the probability of being able to meet future spending commitments

As trust assets increase, less equity is needed to target the same expected life

- ▶ As a result of the lower volatility, the 10% downside life improves (i.e. probability of not running out of money), while the probability of lasting at least 50 years decreases

Due to long-term nature of the trust, a shift to 100% government bonds is not recommend

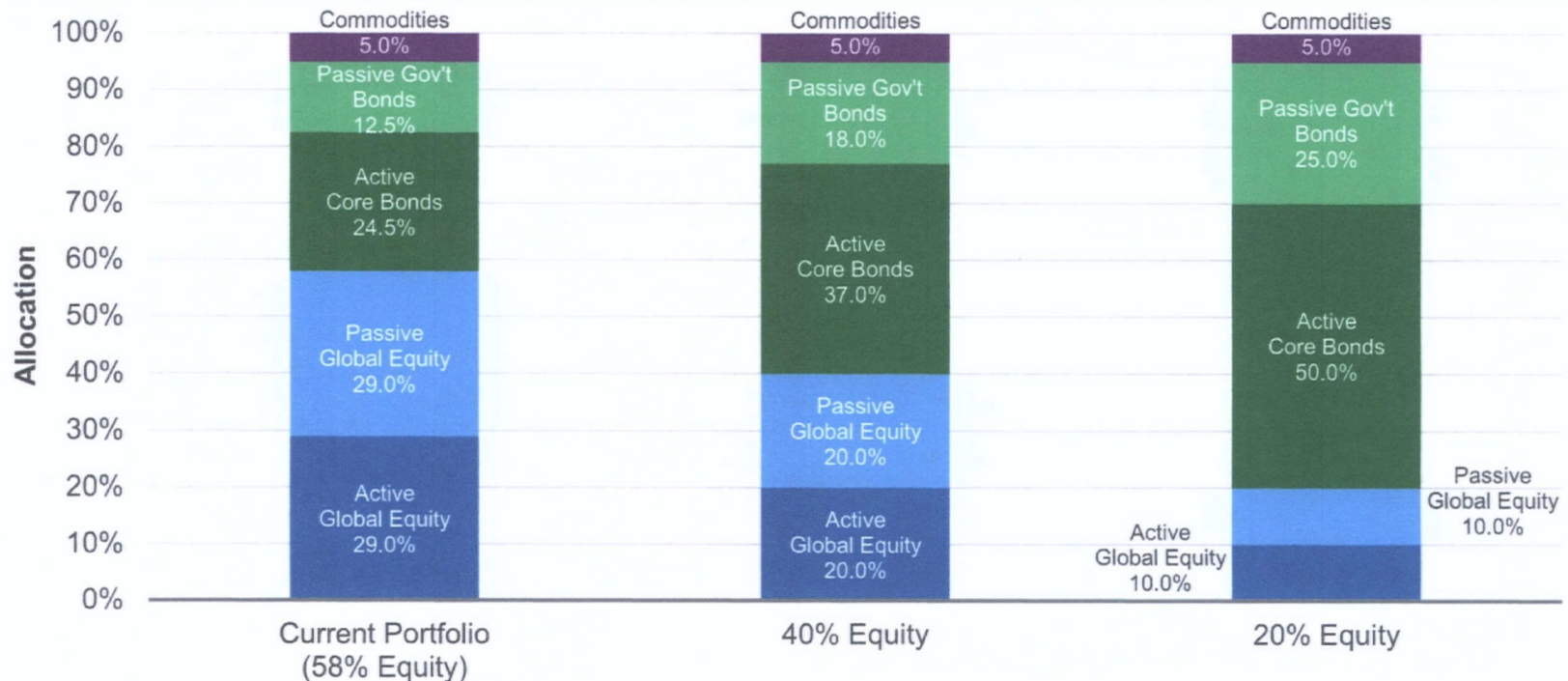
- ▶ Treasury real yield curve ends at 30 years, making it impossible to construct a portfolio that completely immunizes future spending commitments
 - \$500m of inflation-linked bonds (TIPS) can guarantee approximately 21 years of spending, far short of the target 50+ years
 - ~\$650M of inflation-linked bonds (TIPS) only guarantees 30 years of spending, also far short of the target 50+ years

Current investment strategy is constructed using a *Total Return* framework, resulting in a well-diversified portfolio seeking income *and* capital appreciation

- ▶ Income only focus leads to concentrated portfolios with considerable idiosyncratic risk

Effect of equity allocation on trust life

Overview of the current and alternative portfolios



| | Current Portfolio | 40% Equity | 20% Equity |
|-----------------------|-------------------|------------|------------|
| Expected Life | 44 yrs | 36 yrs | 30 yrs |
| 10% Downside Life | 23 yrs | 23 yrs | 23 yrs |
| Prob. Lasting 50+ yrs | 43% | 25% | 3% |

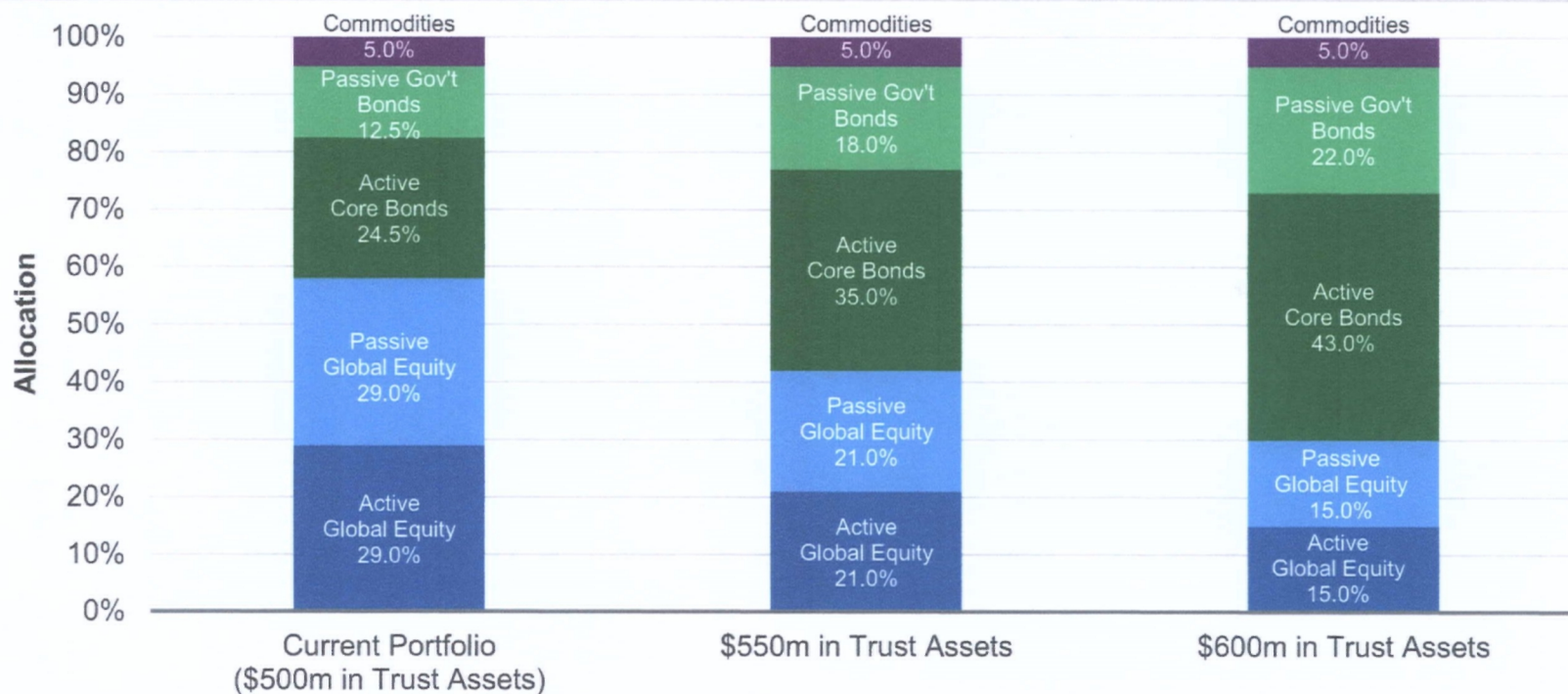
Equities increase the expected life of the trust, while providing a similar level of downside risk as the portfolios with more bonds

- ▶ Although equities are more risky than bonds in the short-term, they have a higher expected return over long time horizons and provide growth to help meet the \$25m annual spending obligation (in real terms)

Source: BlackRock. See Appendix for long-term capital market assumptions.

Effect of trust size on required equity allocation

Overview of the current and alternative portfolios



| | Current Portfolio | \$550m in Trust Assets | \$600m in Trust Assets |
|-----------------------|-------------------|------------------------|------------------------|
| Expected Life | 44 yrs | 44 yrs | 44 yrs |
| 10% Downside Life | 23 yrs | 26 yrs | 30 yrs |
| Prob. Lasting 50+ yrs | 43% | 40% | 37% |
| Equity Allocation | 58% | 42% | 30% |

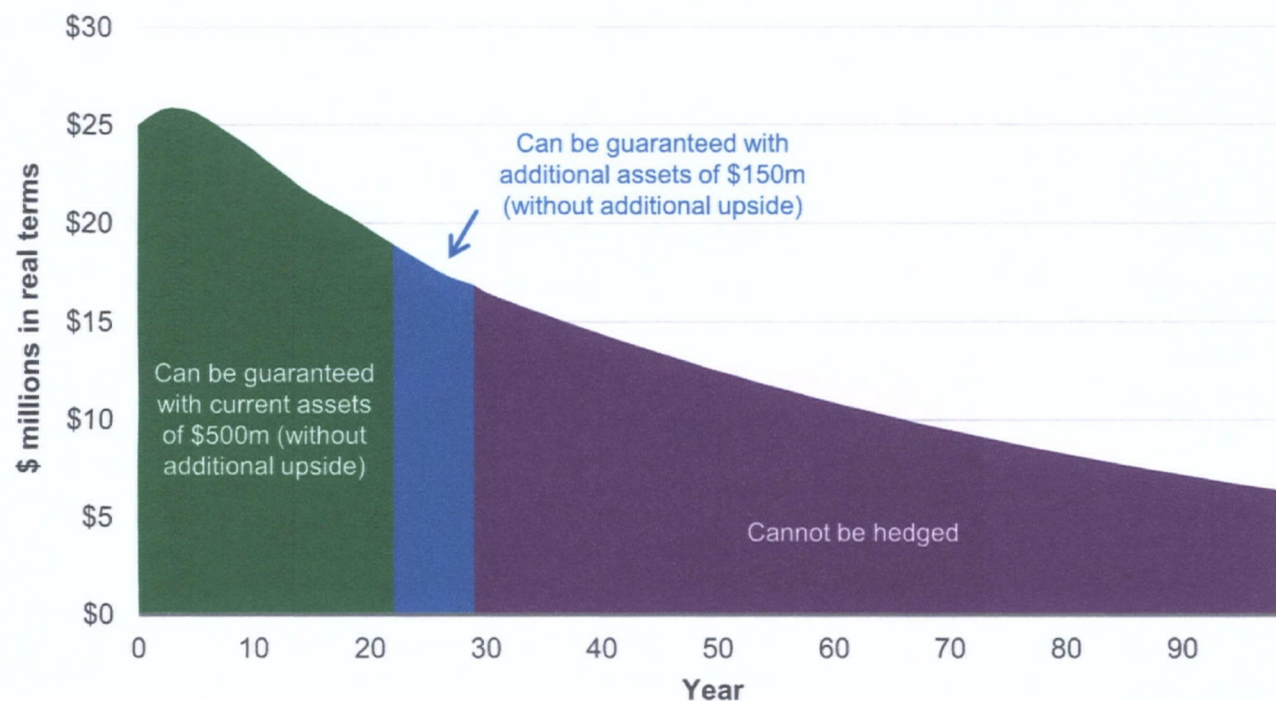
As the size of the trust increases, a smaller allocation to equities is needed to reach the same expected life

- ▶ As a result of the lower volatility, the 10% downside life improves, while the probability of lasting at least 50 years decreases

Source: BlackRock. See Appendix for long-term capital market assumptions.

How large does the trust have to be in order to allocate 100% of the capital to government bonds?

Present value of annual spending



If the trust is willing to sacrifice all upside potential, it is possible to guarantee annual real spending of \$25m for approximately 21 years by purchasing inflation-linked bonds (TIPS)

- ▶ This is not recommended – the 21 year life is less than the 10% downside life of 23 years for the current and alternative portfolios

If the trust were ~\$150m larger (\$650m), it would be possible to guarantee spending for 30 years

- ▶ As before, this sacrifices upside potential and would not be recommended

Source: BlackRock, BofA ML.

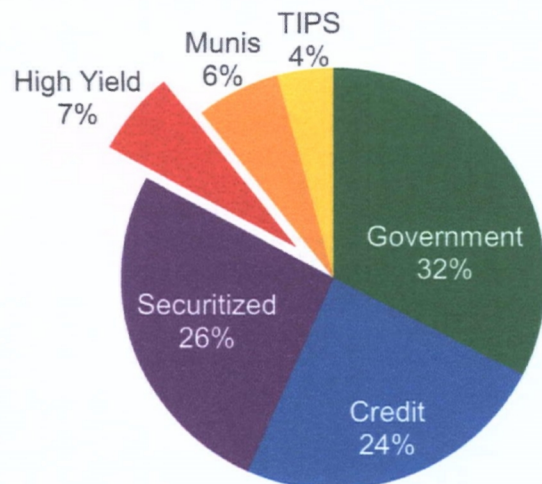
Why think in terms of total return instead of income?

Thinking in terms of income causes investors to construct concentrated portfolios

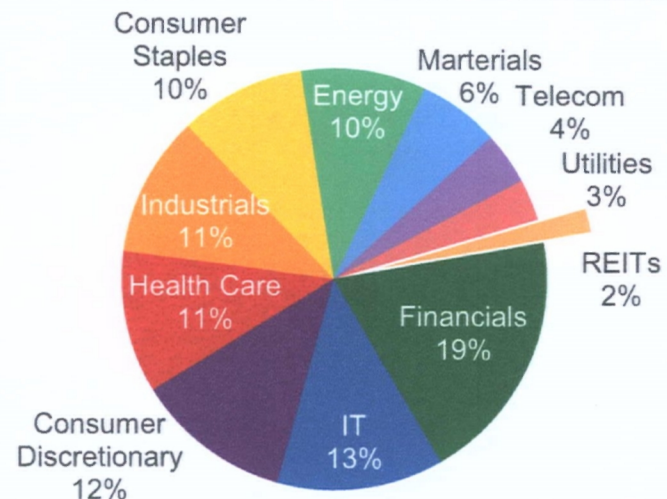
- ▶ Investors would likely allocate heavily to high yield within the bond allocation and to REITs within the equity allocation
- ▶ High yield and REITs are only 7% and 2%, respectively, of their security universes, introducing significant idiosyncratic risk relative to a well diversified portfolio

| Potential risks | |
|---|---|
| High yield | REITs <i>real estate investment trusts</i> |
| <ul style="list-style-type: none"> ▶ If income isn't reinvested, capital will erode over time as companies default on debt ▶ Adds considerably more credit risk than investment grade bonds, which is highly correlated with equity markets ▶ Doesn't add significant interest rate risk, which is diversifying at a total portfolio level | <ul style="list-style-type: none"> ▶ During deflationary environments, returns will be poor due to losses from both property values falling and the real value of the debt used to finance purchases increasing ▶ Due to tax laws, REITs must distribute earnings, leading to limited capital growth if income isn't reinvested |

High yield vs. US bond universe



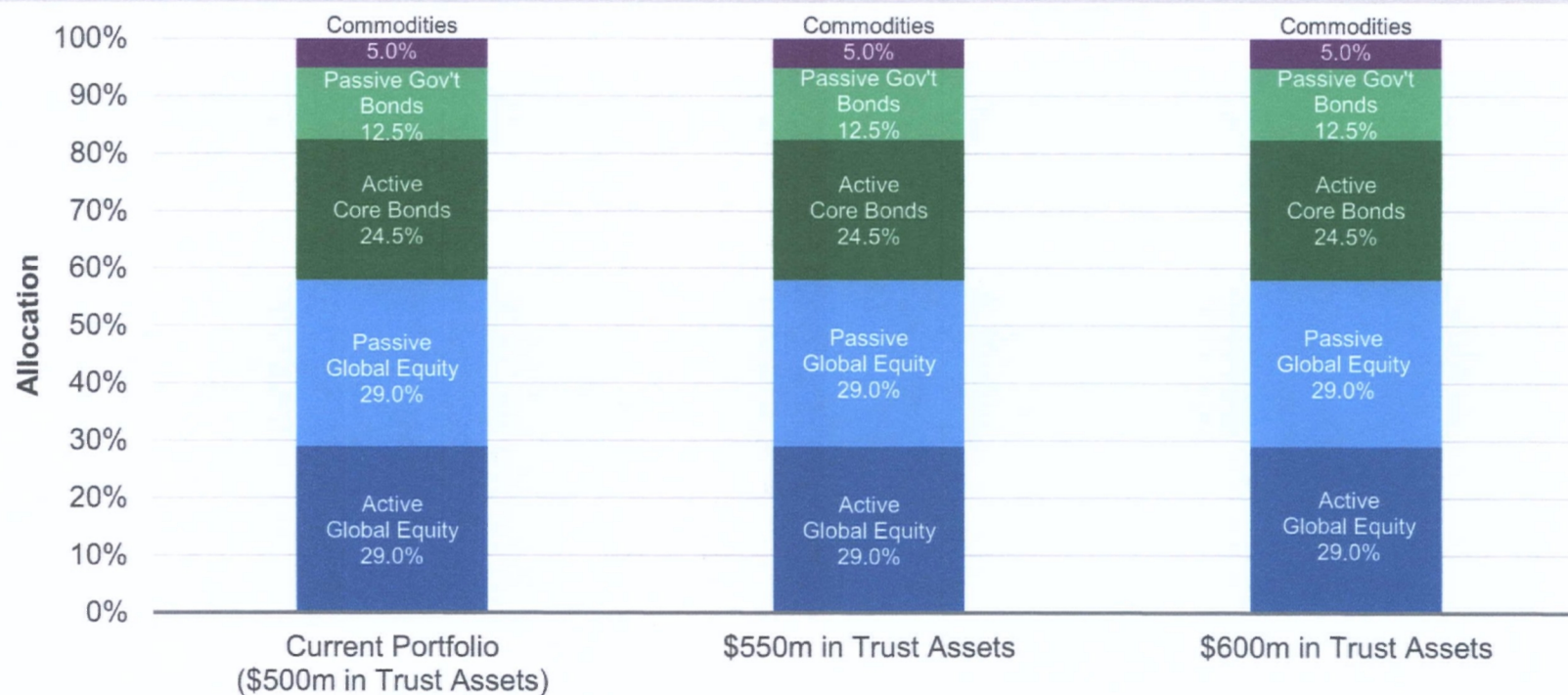
REITs vs. global equity universe



Source: BlackRock, MSCI, Barclays. As of February 28, 2014. US bond universe ignores small sectors that are not part of the Barclays US Aggregate Index, such as 144A securities, convertible bonds, etc.

Appendix A – Effect of trust size on the current policy allocation

Overview of the current portfolio at different sizes



| | Current Portfolio | \$550m in Trust Assets | \$600m in Trust Assets |
|-----------------------|-------------------|------------------------|------------------------|
| Expected Life | 44 yrs | 55 yrs | 72 yrs |
| 10% Downside Life | 23 yrs | 26 yrs | 29 yrs |
| Prob. Lasting 50+ yrs | 43% | 53% | 63% |

Source: BlackRock. See Appendix for long-term capital market assumptions.

Appendix B – BlackRock's long-term capital market assumptions

| Asset Class | Expected Return | Expected Volatility | Expected Correlations | US Equities | Int'l Dev Equities | EM Equities | US Core Bonds | US Govt Bonds | Commodities | Cash |
|--------------------|-----------------|---------------------|-----------------------|-------------|--------------------|-------------|---------------|---------------|-------------|------|
| US Equities | 7.25% | 17.00% | US Equities | 1.00 | | | | | | |
| Int'l Dev Equities | 7.25% | 18.00% | Int'l Dev Equities | 0.85 | 1.00 | | | | | |
| EM Equities | 9.00% | 26.00% | EM Equities | 0.80 | 0.80 | 1.00 | | | | |
| US Core Bonds | 3.00% | 4.50% | US Core Bonds | 0.10 | 0.10 | 0.10 | 1.00 | | | |
| US Govt Bonds | 2.75% | 4.00% | US Govt Bonds | 0.15 | 0.10 | 0.10 | 0.90 | 1.00 | | |
| Commodities | 2.75% | 24.00% | Commodities | 0.25 | 0.25 | 0.30 | 0.00 | 0.00 | 1.00 | |
| Cash | 1.75% | 1.50% | Cash | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 |
| Inflation | 2.25% | | | | | | | | | |

| Expected Alpha Correlations | ACWI Alpha Tilts | Global Multi-Cap Equities | Core Active |
|-----------------------------|------------------|---------------------------|-------------|
| ACWI Alpha Tilts | 1.00 | | |
| Global Multi-Cap Equities | 0.00 | 1.00 | |
| Core Active | 0.00 | 0.00 | 1.00 |

| Strategy | Expected Alpha | Expected Active Risk | Fee |
|----------------------------|----------------|----------------------|-------|
| ACWI Alpha Tilts | 1.75% | 2.00% | 0.45% |
| Global Multi-Cap Equities | 3.00% | 6.00% | 0.60% |
| Core Active | 0.50% | 0.75% | 0.15% |
| MSCI ACWI IMI Index | | | 0.09% |
| U.S. Government Bond Index | | | 0.03% |
| S&P GSCI™ Commodities | | | 0.25% |